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ABSTRACT

A research project was designed and conducted to determine specifically whether the Graduate Management Admission Test (GMAT) has any predictive value in determining how well masters of business administration (MBA) students perform in graduate management education. Several types of information were drawn from the student files of 360 past or current MBA students at Arizona State University: demographic information, grade point average information, GMAT score information, grades in pre-requisite courses required for MBA admission, and grades in graduate level required courses. Pearson correlation was used to evaluate the relationships between GMAT scores and performance and grade point average in the pre-requisite and graduate level courses. The results indicate that (1) there is no significant relationship between pre-requisite MBA courses in terms of preparing students to take the GMAT; and (2) there is no significant relationship between GMAT scores and performance in graduate management education, with the lowest correlations between the GMAT quantitative scores and grade point averages. (BW)

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GMAT - FACT OR FICTION
A Look At The Validity Of The Exam

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GMAT - FACT OR FICTION
A Look At The Validity And Value Of The Exam

On the third page of the current Graduate Management Admissions Test Information Bulletin is the following statement:

> "The purpose of the GMAT is to provide counselors and admissions officers with one predictor of academic performance in the first year of graduate management school. Scores on the GMAT are currently used by approximately 720 schools throughout the world and are required of every applicant by about 555 of them.
>
> Since 1954, when the GMAT was first given (as the Admission Test for Graduate Study in Business-ATGSB), more than 2 million people have taken it. New material is added periodically, and scores on the test are regularly validated against students' first year graduate grades to monitor the effectiveness of the GMAT as an indicator of future performance."

So pervasive and dominant has the GMAT exam become in graduate management education that the vast majority of all MBA program admission's decisions are now made almost exclusively on the basis of some type of formula that weighs undergraduate grade point average (GPA) with the GMAT score to arrive at a point total used to determine if prospective MBA students will be admitted - notwithstanding AACSB guidelines which accommodate work experience as well as GPA and GMAT in the admission decision.

Typical of such formulas is the one used by the College of Business Administration in one western university where the undergraduate GPA is multiplied by 200 and then added to the GMAT score. The resulting point total must exceed 1000 in order for the prospective student to be admitted to the MBA program. A sample of the calculation for two students (student

A and student B) with undergraduate GPA's of 3.25 and 2.70 respectively and GMAT scores of 456 and 358 respectively is shown below in Figure I.

FIGURE I

STUDENT A

(Undergraduate GPA x 200) + GMAT Score = X

(3.25 x 200) + 456 = X

650 + 456 = 1106 TOTAL

Student A would be admitted to the MBA Program in question.

STUDENT B

(Undergraduate GPA x 200) + GMAT Score = X

(2.70 x 200) + 358 = X

540 + 358 = 898 TOTAL

Student B would not be admitted to the MBA Program in question.

THE FALLACY

Unfortunately there are several problems with the current emphasis being given to GMAT scores in admissions to graduate management programs in the schools and colleges of business and management around the country. The following are examples of such problem areas and reasons why the GMAT is suspect:

(1) GMAT scores and such weighed admissions procedures discriminate against older applicants to MBA programs because grade inflation over the past 10 years effectively puts more pressure on older applicants to perform better on the GMAT exam in order to compensate for the fact that they obtained

their undergraduate degrees in an era when grading practices were more stringent and overall grade point averages much lower.

(2) Despite the fact that the organization which administers the GMAT claims to regularly validate its predictive ability with respect to student performance in graduate management education such claims are suspect and open to question. This study has shown clearly that there is no meaningful correlation between GMAT scores and success in graduate MBA management education as measured by grades.

(3) Anyone who has ever worked in and around the admissions process procedure for MBA programs knows from simple observation and the experience and results of having interviewed hundreds of prospective MBA students that the GMAT serves to exclude otherwise worthy and motivated prospective MBA students as much or more than it does to preclude such students who would not or could not succeed to graduate management education.

A brief review of recent relevant literature will serve to illustrate the questionable value of the GMAT exam in admissions decisions.

In 1977, Deckro and Woundenberg reported the results of a survey they had completed on MBA admission criterion in Decision Sciences. Using both Stepwise and Least Squares Regression Analysis they concluded that the largest single multiple R to be found in terms of being able to predict success in graduate MBA courses and programs as measured by grades and grade point averages in those courses and programs was .3812 - indicating that a large amount of variance remains unexplained.

More damning than the multiple R conclusion of the Deckro and Woundenberg study is the fact that the GMAT score entered the regression equation at only .0026 giving the GMAT score less than 1% predictive ability with respect to performance graduate management and business courses.

In 1982, Paolillo reported in a similar fashion in Educational and Psychological Measurement that the GMAT score entered the regression equation at only .26 indicating that the GMAT score has less than 7% validity in terms of being able to predict performance in graduate MBA programs.

With these thoughts in mind a research project, explained in subsequent sections, was designed and conducted to determine specifically whether the GMAT has any predictive value in determining how well MBA students perform in graduate management education.

RESEARCH DESIGN

A sample of 360 past or current MBA students at Arizona State University (ASU) in Tempe, Arizona was drawn from student files of the College of Business at ASU.

The following information was then drawn from the student files:

DEMOGRAPHIC INFORMATION

- Age
- Marital status
- Number of dependents
- Sex
- Citizenship
- Year Bachelors Degree obtained
- Year MBA Degree obtained
- Number of years of work experience between degrees
- Academic major
- Undergraduate institution

GRADE POINT AVERAGE INFORMATION
- Cumulative undergraduate GPA
- Last two years GPA (undergraduate)
- Major GPA (undergraduate)

GMAT (ATGSB) SCORE INFORMATION
- —Verbal
- —Quantitative
- —Total

GRADES IN PRE-REQUISITE COURSES REQUIRED FOR MBA ADMISSION
- --Introductory Accounting 101 (Financial)
- —Introductory Accounting 102 (Managerial)
- --Introductory Economics 201 (Micro)
- —Introductory Economics 202 (Macro)
- —Statistics 221
- —Business Law 305
- --Financial Management 300
- --Marketing Management 301
- —Management 301
- Pre-requisite grade point average

GRADES IN MBA (GRADUATE LEVEL COURSES) REQUIRED
- —Business Research Methods 500
- --Economics 501
- --Economics 553
- --Statistics 522
- —Operations Research 523
- --Accounting 501
- —Management 501
- --Finance 561
- --Marketing 501
- --Policies 591
- Graduate level (MBA course) grade point average

Once the information was obtained, coded, and a data file built the SPSS Pearson Correlation statistical routine was utilized to evaluate the correlation or relationships between GMAT (ATGSB) scores and performance and grade point average in the above mention pre-requisite and MBA (graduate level) courses. The results of the correlation analysis are shown in Table I.

TABLE 1

Results of Pearson Correlation
Analysis and Grades, and Grade Point

GMAT (ATGSB) SCORES	PREREQUISITE COURSES									
	Acctg 101	Acctg 202	Econ 201	Econ 202	Stat 221	Bus Law 305	Fin 300	Mkt 301	Mgt 301	Pre-Reguisit GPA
VERBAL SCORE	.1380	.1829	.0857	.2331	-.1304	.0760	.0255	.2323	-.1746	.2758
QUANTITATIVE SCORE	.1608	.0328	.1349	.2293	-.0079	.0229	.0007	.0857	-.1128	.1591
TOTAL SCORE	.1792	.1400	.1560	.3037	-.0708	.0515	.0621	.2242	-.1342	.2713

	GRADUATE LEVEL COURSES										
	Business Research Method 500	Econ 501	Econ 553	Stat 522	Oper. Research 523	Acctg 501	Mgt 501	Fin 561	Mkt 500	Policies 591	Graduate Course GPA
VERBAL SCORE	-.1331	-.1273	.0450	-.0510	.0425	.1342	.0349	-.0486	-.0253	.0209	.3191
QUANTITATIVE SCORE	-.1948	-.0015	-.0115	.1011	.0756	.0670	-.0980	-.0102	-.0465	-.0725	.1383
TOTAL SCORE	-.1558	-.1361	.1338	.0458	.1785	.1566	-.1135	.0215	-.1006	-.0853	.3072

NOTE: Numbers in the table indicate the correlation coefficients for the relationship found to exist between ATGSB (GMAT) scores--verbal, quantitative, and total scores, and individual grades in both pre-requisite and graduate level MBA courses as wells as overall grade point averages.

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FINDINGS

Of particular interest in the study is the fact that the study results indicate (1) that there is apparently no significant relationship between pre-requisite MBA courses in terms of being able to prepare students to take the GMAT exam and (2) that there is no significant relationship between ATGSB (GMAT) scores and performance in graduate management (MBA) education - raising the rather interesting question as to the value of the exam given its lack of validity.

The strongest relationship found to exist between the admission test scores and overall graduate level GPA was found at approximately the same level between the "verbal score" and the "total score" when compared to overall GPA - but even there the correlation was found to be only .3191 and .3072 respectively. Of even more interest however is the fact that the correlation between the quantitative score and the performance was only .1383 - especially in light of the increasing emphasis being given in many MBA programs to quantitative and mathematical coursework. Another was of looking at the apparent absence of a significant relationship between test scores and graduate program grades is to square the correlation (i.e., $(.30)^2$) and say that only approximately 9% of performance in graduate management education courses can be explained by GMAT (ATGSB) scores.

Other important finding include the fact that performance in pre-requisite MBA courses has an even weaker relationship (correlation) to admission test scores. Here the strongest correlation between test scores and pre-requisite GPA was found to be only .2753 ($(.28)^2$ = 7.8% predictive ability), making highly suspect, the advice often given to aspiring MBA students that pre-requisite courses should be completed prior to sitting

for the entrance exams as a means of more adequately preparing for such.

Finally, as indicated above, the study produced the rather interesting finding that the lowest of all the relationships (correlations) to be found existed between the quantitative scores on the admissions tests and grade point averages. This finding would seem to bring into question the substantial emphasis found in many MBA programs on quantitative courses and activities.

Given the fact that the GMAT exam has less than 10% predictive ability in determining performance in graduate MBA programs what has apparently become institutionalized in the admissions process in most MBA programs is the moral and legal equivalent of asking an applicant for a truck drivers job to take piano and typing lessons and pass a typing test and successfully complete a piano recital before he/she can be hired.

In a word, it would appear not only from the results of this study but also from the research of Paolillo and Deckro-Woundenberg that the GMAT is virtually useless in its predictive ability of performance in MBA programs - its proported purpose.

Why then do we, in graduate management education, continue to use the exam as a 50-75% criterion in the admissions process you ask? The answer is really quite simple - it provides a simple, convenient and easy to use crutch for graduate MBA program directors and admissions committees - all but a flimsy and discriminatory crutch that serves as much or more to preclude the admission of "high promise students" than to exclude those not possessing "high promise."

The guidelines of AACSB themselves even seem to hint at the questionable value of the exam:

> "In implementing these guidelines, the use of test cut-off scores for individual decisions is discouraged."

Deckro and Woundenberg concluded in their article that,

> ". . . heavy reliance on the mechanical standard (GMAT scores, etc.) is inadequate. Individual evaluation of applicants . . . is critically important to the success of the admissions process . . ."

And Paolillo concluded in his article that,

> ". . . these predictors should not be relied upon exclusively . . . a large amount of variance was left unexplained. Heavy reliance on quantifiable standards (GMAT scores, etc.) . . . would seem to be inadequate . . . individual evaluation of applicants using a variety of qualitative variables may be helpful . . . especially in view of the influx of non-traditional students . . ."

Having worked closely with the admissions process in MBA programs at two major universities, Arizona State University and the University of Wyoming, for over half a decade now I would take an even stronger position the in the absence of greater empirical evidence of validity the GMAT exam should be junked, at least as a greater than 10% variable in the admission process.

To those who respond, "but what better standard is there?" I would respond that a 10% predictor variable is no variable at all especially when it is being used as a 50-75% factor in the admissions process.

The best thing that could be done would be to remove the crutch so that good admissions decisions must be made.

CONCLUSIONS

Perhaps the single and most valuable conclusion that can be drawn from this study and this data set is that the GMAT (ATGSB) exam seems, in reality, to have little if any value as a useful predictor of success in graduate management education programs in general and hence that it may in fact be a highly unreliable screening device in the admissions process of MBA programs around the country.

For those who swear by the use of the exam, perhaps what is needed at this point is a three pronged approach:

(1) more replications of this study, to further an independent reliability and validity data base

(2) extensions of this study, to establish whether a predictive relationship exists generally between admissions test scores, success in graduate management education, and success in the practice of management and life in general

(3) more creativity in developing admissions standards and criteria for graduate study in management--i.e., less emphasis on admission tests scores and more emphasis on alternative measures or approaches such as probationary admission periods, assessment centers, and personal interviews.

Hopefully, this study will serve as the catalyst for a whole series of studies in this important area because there is most certainly an enormous breach between management theory and the practice of management in our society when the single most important criterion from admission tc graduate management education has only 10% predictive validity. One way

to narrow that gap is to develop new programs, new ideas, and new approaches to graduate management education - a part and partial of which will require the injection of greater relevance and accuracy in the admissions process thereto.

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